Biases in Product Evaluation:
An Anatomy of Country of Origin Effects

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Abstract

The tendency for consumers to evaluate a product more favorably when its country of origin is favorable is known as the country of origin effect, and is well documented in the literature. The present study attempted to test if two process variables, namely, information amount and involvement in making buying decisions, were boundary factors. Results indicated that there was a country of origin effect on product evaluation only when consumers were information-overloaded and highly involved in making buying decisions. To continue the work of Hong & Wyer (1989), five hypotheses were examined in order to understand the cognitive processes underlying country of origin effects. Results rejected explanations based on cognitive elaboration, encoding, polarization, or summary representation, but supported the attribute hypothesis, which suggested that country of origin was treated as a product attribute in the product evaluation process. It was found that, in the information overload and high involvement conditions, subjects used all the information provided for product evaluation, including the country of origin information, leading to country of origin effects. On the other hand, in information underload or low involvement conditions, subjects used important product information only, without considering the country of origin information, thereby nullifying country of origin effects. A cognitive model of product evaluation was proposed, and marketing implications of these findings were discussed.

Biases in Product Evaluation:
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The attributes of a product may determine how it is evaluated by consumers. However, when people have information stored in their schemata about the object to be evaluated, they may discount the incoming information, leading to inaccurate evaluations (Brewer and Nakamura, 1984; Rumelhart, 1984). The present study attempted to examine one type of these stereotypic evaluations: country of origin effects.

Bilkey and Nes (1982) found that consumers used the country name to infer the quality of an unknown foreign brand; Erickson, Johansson, and Chao (1984), Johansson, Douglas, and Nonake (1985), and Darling & Arnold (1988) found that country image affected consumers' evaluations of products. These effects are named country of origin effects. These findings parallel studies of sex and racial stereotypes (Duncan, 1976; Karlins, Coffman & Walters, 1969; Sagar & Schofield, 1980; Taylor, Fiske, Etcoff & Ruderman, 1978), job evaluation of gender-stereotyped jobs (Hornsby, Benson, & Smith, 1987; Mount & Ellis, 1987; Naughton, 1988). Studies in person perception (Cantor & Mischel, 1977; Hamilton & Rose, 1980; Rothbart, Evans & Fulero, 1979) also found that stereotypes or prior expectations affect subjects' evaluations of people.

There is no doubt that stereotypes affect people's evaluations of products. However, an important question

more germane to effective marketing is when and how people are affected by these stereotypes. This question is especially important for practitioners who are marketing products from countries with unfavorable stereotypes. The answer for this question can also guide marketers to allocate their resources wisely when they are marketing goods from countries with favorable stereotypes.

Boundary of Country Of Origin Effects

Though country of origin effects are well documented (for a review, see Bilkey and Nes, 1982; Erickson, Johansson, & Chao, 1984; and Johansson, Douglas, & Nonaka, 1985), there is little progress in identifying the boundary for these effects. Bilkey and Nes (1982) reported that the effects of demographic and personality variables (Schooler, 1971; Anderson & Cunningham, 1972) on country of origin effects have received a lot of empirical attention, but there have been no consistent findings. Fortunately, Thorelli, Lim & Ye (1989) found that high warranty combined with high store image can reduce the negative effect of the country of origin, making this line of study more promising. The present study therefore attempted to identify the boundary of country of origin effects by studying the effects of involvement level for making buying decisions, and the amount of information available.

Involvement level for making buying decisions. In a recent experiment, Omota and Borgida (1988) found that highly involved male subjects, who expected that there

would be some long term interactions, evaluated a black hypothetical female target less favorably than a white one, but no such racial stereotypic effect was found in low involvement subjects, who expected that there would only be some brief interactions. Research in purchase involvement may give an explanation for this finding. These studies suggest that the higher the involvement level, the more extensive is the search for information relevant to the purchase (Beatty & Smith, 1987; Bloch, Sherrell, & Ridgway, 1986). On the one hand, Harris (1987) & Zaichkowsky (1986) concluded that consumers would exert extensive effort in information search in high involvement situations, such as aiming at saving money, winning a prize (Celsi & Olson, 1988). On the other hand, Hoyer (1984) found that consumers made quick and effortless decisions for unimportant purchases, which suggest that limited information seeking and cognitive processing would take place in low involvement situations.

To explain these findings, Celsi & Olson (1988) had conducted an experiment and found that felt involvement was a motivational state which would make consumers devote more attention to the advertisements, and that they would have a larger number of thoughts about the product. This finding is consistent with Borgida & Howard-Pitney's (1983) result that personal involvement would attenuate the impact of salient stimuli, but increase the importance of other stimuli on judgments, because subjects attended to all the stimuli, not only those that were salient.

Based on this logic, involvement should motivate consumers to consider more stimuli, whether salient or non-salient. Therefore, in high involvement situations, if consumers use all of the product information without filtering, country of origin will be included in product evaluation process. If country image represents stereotypic information, its inclusion will lead to stereotypic evaluation of the product.

On the other hand, consumers with low involvement may consider only the most salient attributes, and neglect the relatively less salient attributes. Ettenson, Wagner, & Gaeth (1988) found that in apparel purchase decisions, the country of origin was less salient (explained less than 6% of variance in average) than other product attributes, like fiber content (28.5%) and price (14.5%). Apparently, country of origin is a relatively less salient attribute and is neglected in low involvement situations. Hence, country of origin effects may occur in high involvement conditions only.

Information amount. Keller & Staelin (1987, 1989) have found that when consumers are information-overloaded, their accuracy in assessing the utility of available alternatives would be lowered. In line with their findings, Moore, Hausknecht & Thamodaran (1986) found that time-compressed advertisements, which probably lead to information overload, could suppress cognitive responses (such as generating counter-arguments), but enhance the

persuasiveness of these advertisements.

In other words, information overload may use up consumers' mental capacity, which is critical for making cognitive responses, and hence reduce their ability to screen out irrelevant or misleading information. This argument is in parallel with Linn, Delucchi & de-Benedictis' (1984) finding that 7th and 8th graders lost track of their brand selection criteria, when confronted with advertisements' claims, simply because they added those suggested criteria to their own criteria. Brockhoff (1984) also found that the 6 month forecasts of interest rates, made by 50 managers, decreased in accuracy as data used increased. In fact, Keller & Staelin's (1987) findings suggested that subjects made more effective decisions when they were somewhat selective, using most but not all of the available attribute information. Hence, information overload, which can prevent consumers from screening out this piece of information, may be another necessary condition for country of origin effects.

Interaction effect of involvement level and information amount. It should be noted that, even though consumers are confronted with a large amount of information, they may not be truly information overloaded. They may selectively attend to the most salient information, and neglect all other less salient product information unless they are highly involved in the purchase decision (Harris, 1987;Keller & Staelin, 1987). In short, consumers would prevent themselves from being information

overloaded, unless they are highly motivated to process a large amount of information.

Since country of origin is a relatively less salient attribute (Ettenson, Wagner, & Gaeth, 1988), it may be neglected in low involvement situations, and it should have no effect on product evaluation. Therefore, information overload alone is not sufficient for the country of origin effect to occur. Consumers must also be highly involved in the buying decision for being truly information overloaded.

On the other hand, when consumers are highly involved in a buying decision, but are not information overloaded, they should have enough mental capacity to process all the available information and screen out some irrelevant or misleading information in the product evaluation process. Therefore, country of origin effects may not occur. Hence, involvement alone is insufficient to cause the country of origin effect. Consumers must be information-overloaded and highly involved in the purchase decision simultaneously.

To sum up, high involvement and information overload separately are insufficient conditions for the country of origin effect to occur. Consumers should show country of origin effects only when they are both information-overloaded and highly involved in making buying decisions. Following this analysis, a hypothesis for the boundary of country of origin effects is formally stated as follows:

Country of origin effects would only be found when both involvement for making buying decision and information

overload is high.

Cognitive Processes of Stereotypic Evaluation

Although numerous studies have been conducted on country of origin effects since mid-1960s, the underlying cognitive processes have not received much attention until recently (Hong & Wyer, 1989; Han, 1989).

Cognitive elaboration hypothesis. Hong & Wyer (1989) tested four hypotheses in a laboratory experiment, namely encoding, heuristics, primacy-recency, and cognitive elaboration, and their results supported the cognitive elaboration hypothesis. According to the cognitive elaboration explanation proposed by Hong & Wyer (1989), subjects would think more extensively about the information if their curiosity is excited by knowing the country of origin in advance. Hence, the information should be more deeply processed which could be better retained and recalled (Craik & Lockhart, 1972).

It should be noted that, in Hong & Wyer's design, subjects were presented either five desirable or five undesirable attributes, plus 11 ambiguous or unimportant attributes and the country of origin information. Under this manipulation, subjects could only attend to homogeneous information, but had no opportunity to receive both positive and negative information simultaneously. In real-life situations, however, product information is heterogeneous and conflicting. Therefore, it is important for validity considerations to examine if the cognitive processes will be different when information received is

conflicting.

If both positive and negative information is presented, Hong & Wyer's cognitive elaboration reasoning may not apply. In fact, Srull (1981) and Hastie & Kumar (1979) found that subjects recalled more expectation-incongruent than expectation-congruent behaviors, and expectation-irrelevant behavior were the least recalled. Balzer (1986) also found that subjects in the negative initial impression condition recorded a higher percentage of positive behavior than subjects in the positive initial impression condition. Thus, schema-related incongruent information should be recalled better than schema-related congruent information, and leads to a contrast effect on the recall rates.

Based on the above analysis, the cognitive elaboration hypothesis would predict that if the country of origin is known before other information is presented, more negative information will be recalled if the country of origin creates a favorable expectation; more positive information will be recalled if the country of origin creates an unfavorable expectation; and there will be no difference if the country of origin is not known before the other information is presented (Table 1). In short, if the cognitive elaboration hypothesis is correct, there would be a reverse country of origin effect, and it would make the cognitive elaboration argument inappropriate for explaining the country of origin effect, when both positive and

negative information is presented to subjects.

Insert Table 1 about here

To resolve this puzzle, the present study attempted to verify the validity of cognitive elaboration explanation. A few other hypotheses discussed in the literature were also tested.

Encoding hypothesis. Stereotypic evaluations can occur in information encoding. According to Srull and Wyer's (1989) person impression formation model, when people expect that a target has certain traits, the interpretation of his/her behaviors may be affected and biased toward confirming the possession of the stereotype-linked traits. This phenomenon is in parallel with the illusory correlation phenomenon (Hamilton and Rose, 1980). As illustrated by Srull and Wyer (1989), giving someone an answer in an examination might be encoded as either kind or dishonest, depending on the relative accessibility of the kindness and dishonesty schemata. Base on this logic, the encoding hypothesis predicts that, people would distort the interpretation of the incoming information to confirm their prior expectations.

In the context of product evaluation, the encoding hypothesis predicts that if the country of origin is known before other information is encoded, information will be distorted in a direction consistent with the connotation conveyed by the country name. However, there will be

little distortion if the country of origin is not known before encoding any product information (see Table 1).

Polarization hypothesis. Based on the studies of racial stereotypes (Taylor & Fiske, 1978; Duncan, 1976; Sagar & Schofield, 1980), and labeling effects (Becker, 1963; Kitsuse, 1962; Schur, 1979), the evaluation of specific traits was biased in the direction of prior expectations. In parallel with this point of view, Han (1989) found that country of origin, when it was unfamiliar to people, could serve as a halo from which consumers infer a brand's product attributes. (See also Erickson, Johansson, & Chao, 1984; and Johansson, Douglas, & Nonaka, 1985). Therefore, the polarization hypothesis predicts that prior expectations would make people polarize their evaluations of individual attributes in the direction of the evaluative connotation of the country name (see Table 1).

Attribute hypothesis. Research on impression formation reveals that people only use the first several pieces of information to make judgments of others (Asch, 1946; Dreben, Fiske & Hastie, 1979; Lichtenstein & Srull, 1987). Webster's (1964) study on job interviews also showed that job interviewers made their decisions in the first five minutes of the interviews, rather than suspending them until the end of the interviews. Therefore, Hong & Wyer argued that if country of origin was regarded as a product attribute, then the earlier the

country of origin was known, the greater was its impact on product evaluation. In other words, there would be primacy effect on product evaluation if country of origin is regarded as a product attribute.

However, it should be noted that, subjects make the initial impression based on several similar pieces of information, but not on one piece of information. Therefore, a single piece of information about the country of origin may not be able to produce a primacy effect. In fact, Dreben, Fiske & Hastie's (1979) results showed that there was primacy effect in the conditions when eight sentences were presented before an evaluation, but a recency effect when these eight sentences were grouped as four pairs, and evaluations were made after the presentation of each pair of sentences. Although Asch's (1946) study showed that a single trait was able to result in primacy effect, it may be considered as a special case, since the trait (warm-cold) was a central trait. As argued before, country of origin may not be a salient attribute, and should not be able to act as a central trait.

On the other hand, a more sensitive test of the attribute hypothesis is to test if country of origin has any direct effect on product evaluation, when its effect is contrasted with the effects from other product attributes. If it is function as a product attribute, it should have unique direct effect on product evaluation. Therefore, the attribute hypothesis predicts that country of origin

has unique direct effect on product evaluation.

Summary representation hypothesis. Anderson (1974a, 1974b) suggested that people will combine or integrate individual attribute information into an overall concept so as to make a global evaluation. However, if people are information overloaded, they will be motivated to use heuristics to make evaluations (Sherman & Corty, 1984; Bodenhausen & Lichtenstein, 1987; Bodenhausen & Wyer, 1985).

A possible strategy one can use as to prevent oneself from being information-overloaded is to use solely the pre-stored summary representation (or summary construct, as used by Han, 1989; summary statistics, as used by Johansson, 1989) of a product, instead of using the other information presented as well, in product evaluation. A summary representation is often the result of an abstraction process (Smith & Medin, 1981, chapter 3). Moreover, by condensing the various information into a single summary greatly reduces the amount of information we need to store, and therefore prevent one from being information overloaded (Rosch, 1978).

Johansson (1989) argued that one of the heuristics consumers can use is to look for "summary statistics" (such as brand name), which encompass all or most of a bloc of attributes, and country of origin may be one of these summary statistics (Johansson, 1989). This argument is consistent with Hong & Wyer's (1989) heuristic hypothesis,

Han's (1989) summary construct model hypothesis, and Bodenhausen & Wyer's (1985) finding that stereotypes function as judgmental heuristics in judging the likelihood of transagressive recurrence.

However, since the human cognitive capacity is limited, the summary representation can only be an abstract of the core or important product attributes. This argument is supported by the fact that typical members contain attributes common to many other members, that is, core attributes, but not uncommon attributes (Smith & Medin, 1981, p.69-70). This argument also parallels Pinson's (1986) point of view that consumers would store their implicit product schemata in the form of exemplars or typical instances (p.27).

Thus, it should also be noted that such a summary representation would contain the core product information only, but not the peripheral product information. Therefore, it cannot replace the less important product information, and consumers may still use this information for product evaluation in addition to the existing summary representation.

If country of origin is a summary representation, it should have a direct effect on product evaluation, no matter whether it is known before or after other product information. Therefore, the summary representation hypothesis predicts that the effect of important product information on product evaluation could be replaced by country of origin (Table 1).

Method

Design

The overall design of the experiment was a 2 x 2 x 2 x 2 factorial, with the independent variables being country of origin (Switzerland vs. China), presentation order of country name (first vs. last), extrinsic reward (HK$10.00 vs. HK$1.00), and amount of product information (32 vs. 8 product attributes).

Subjects

The participants were 256 undergraduate students (128 men and 128 women) at the Chinese University of Hong Kong who enrolled in a psychology course. They participated in the experiment as a partial fulfillment of the course requirements. Five more subjects also participated in the study, but their responses were not analyzed due to their failure to report the country of origin of the product.

Stimulus Material

Product. Watches were chosen as the product for the present experiment, because virtually every student has at least one watch. Therefore, product familiarity and buying experience could be assumed.

Selection of Countries. 24 undergraduate students (12 men and 12 women) studying in the college library were invited to rate their impressions of watches made in 20 different countries on 9-point scales, ranging from extremely poor to extremely good, with 0 indicating no impression at all. The 20 countries were Hong Kong, India,

Japan, South Korea, Malaysia, Mainland China, Philippines, Singapore, Taiwan, Thailand, Canada, Denmark, England, Hungary, Monaco, Poland, Switzerland, Mexico, West-Germany, and United States, with the first 10 countries located in Asia, and the last 10 countries located in Europe or North America. The presentation order was counterbalanced.

Table 2 shows that watches made in some of these countries were unfamiliar, and 9 countries were therefore screened out. Among the remaining 11 countries, Switzerland receiving the highest rating, followed by Japan. The country received the lowest rating was Mainland China, followed by Taiwan. These four countries were therefore selected for another pilot study.

Insert Table 2 about here

Attribute Information. 48 undergraduate students were invited to write down product information about watches made in one of the above four countries. An average of 9.25 attributes was mentioned for watches made in Japan, 7.67 for both Switzerland and China, and 4.08 for Taiwan, numbers which may reflect different schema sizes for watches made in these countries. In order to control the size of the schema, Switzerland and China were chosen as the country of origin for the present study. A total of 45 different attributes were mentioned by subjects, and the 32 attributes with the highest frequency were used as

product information for the present experiment. (Appendix 1) These attributes were elaborated into equal amounts of positive and negative product information.

Procedure

Subjects in groups of four participated in the experiment. They were first greeted by the experimenter and were informed that they would see some slides of product information about a watch. Subjects were told that they had to make a buying decision at the end of the experiment. They were told that if they had made a 'correct' decision, they would receive a monetary incentive of either HK$1.00 or HK$10.00. (Notice that, they were not told to memorize the product information). A testing slide, "This experiment is sponsored by the China Gas Company Ltd.", was shown in order to 1) make sure each subject could see the product information clearly, and 2) lead subjects to believe that they would receive the incentive if they could make the correct decision.

Each slide was shown for 5 seconds, which was pre-tested as a suitable duration for comprehending each piece of product information. The order of slides was counterbalanced to eliminate any order effects.

After the presentation of these slides, subjects were incidentally asked to free recall the product information as much as possible in about five minutes, which was more than enough according to the result of a pilot test. The free recall sheets were then collected and they were

instructed to rate the watch on the 32 attributes in another questionnaire.

Subjects were, in fact, not asked to make any buying decision, and finally incentives were distributed to each subject. They were thanked and instructed not to disclose any information concerning this experiment to any people.

Manipulations of independent variables. Country of origin was manipulated by a slide showing either 'made in Switzerland' (a favorable country) or 'made in China' (an unfavorable country). Amount of product information was manipulated by showing 8 pieces of important product information[1] (information underload) or 8 pieces of important product information plus 24 pieces of less important product information (information overload), in addition to the country of origin information. Order of country name presentation was manipulated by either showing the country name as the first (country first) or as the seventh[2] (or twenty-fifth) piece of product information (country last). Extrinsic reward was manipulated by telling subjects that they would receive either HK$1.00 (low reward) or HK$10.00 (high reward), if they could make a correct decision. To enhance the salience of this manipulation, this instruction was mentioned twice.

Dependent measures. Immediately after the product information presentation, sheets were distributed to each subject for writing down the free recalled product information. They were instructed to write only one piece of product information on each line. They then received

another questionnaire (Appendix 2), and were instructed to indicate the following: their evaluative impression of the watch on the 32 product attributes; the overall product evaluation (liking and goodness); and the country of origin of the watch. Their evaluations of the 32 attributes, and overall product evaluation were measured by 9-point semantic differential scales.

Finally, manipulation checks were presented. Subjects were asked to indicate: the quality of watches made in that country (from very poor to very good); the incentive of the experiment (from too little to reasonable); and amount of product information (from very insufficient to too much). All of them used 9-point scales.

Demographic variables. Year of study and sex of subjects were recorded.

Results

Manipulation Checks

Analyses of covariance[3], with subjects' year of study and sex as covariates, were conducted to test the successfulness of the manipulations. Results indicated that impressions of watches made in Switzerland were significantly better than those made in China, $F(1,252)=359.7$, $p<.01$, $m= 2.13$ vs. -1.56; subjects who received HK$10.00 felt the reward was more reasonable than those who received HK$1.00, $F(1,252)=22.2$, $p<.01$, $m=0.98$ vs. -0.20; subjects who had seen 32 pieces of information felt they received more product information than those who

had seen only 8 pieces of information, $F(1,252)=203.31$, $p<.01$, $m=1.27$ vs. -2.15. Therefore, all of the manipulations were successful.

Boundary of Country of Origin Effect on Product Evaluation

Product evaluation was measured by liking and goodness of the product. These two items were highly correlated ($r=0.76$), and they were averaged to form an index of product evaluation.

To locate the boundary of country of origin effects, a 4-way ANCOVA was conducted, with country of origin (country), presentation order of country name (order), reward, and amount of product information (information) as the independent variables; product evaluation as the dependent variable, sex and year of study as the covariates. To further clarify the results, simple main effect tests were conducted if an interaction was significant.

If an independent variable is critical to the country effect, a significant country x independent variable interaction should be found, in which the country effect should be significant at one level, but not at the other.

Results show that the country main effect was significant, $F(1,238)=4.90$, $p<.05$, $m=-1.34$ vs. -1.74, suggesting that subjects evaluated the Swiss watch better than the Chinese watch. The country of origin effect was however qualified by a country x reward x information 3-way interaction, $F(1,238)=5.02$, $p<.05$, and no other interactions was significant.

Simple main effect tests showed that the country main effect was significant in the high reward and information overload condition only, $F(1,62)=10.74$, $p<.01$, but was non-significant in other conditions (Table 3), supporting the proposed boundary for the country of origin effect hypothesis.

Insert Table 3 about here.

Psychological Mechanisms for the Country of Origin Effect

Since the country of origin effect was only found in the high reward and information overload situation, this condition was further analyzed for the psychological mechanisms for the country of origin effect. The subsequent tests, unless specified, were based on the data in this condition only.

Free recall of product information. The free recall data were scored by two judges independently. Two marks would be given if a subject could correctly recall the complete meaning of a piece of displayed information. One mark would be given if a subject could correctly recall the meaning of either the displayed product attribute or the attribute evaluation (for example, classic and elegant watches with hands was recalled as watches with hands). Furthermore, a recalled answer would be coded as positively (or negatively) distorted if the attribute value was favorably (or unfavorably) distorted (for example, metal case was distorted as golden case; water resistance

of 150 meters was distorted as 50 meters). The inter-judge correlations of the recall rates of positive and negative information were 0.9826 and 0.9869 respectively. The percentage of agreement[4] was 82.4 and 79.2, respectively. The inter-judge correlations for positive and negative distortion rates were 0.5253 and 0.4321 respectively. The lower correlations were caused by a low response rate because most subjects did not have any distortion of information, leading to a non-normal bivariate distribution. In fact, the percentages of agreement of positive and negative distortions were 94.2 and 96.1, respectively.

Encoding hypothesis. Two ANCOVA's were conducted with country and order as the independent variables, sex and year of study as the covariates, positive or negative distortion rates as the dependent variables, respectively. Results revealed that there was no country x order interaction effect on positive and negative distortion rates, $F(1,58)<1$, n.s. and $F(1,58)<1$, n.s., respectively. Means were shown in Table 4. The encoding hypothesis was therefore not supported.

Insert Table 4 about here

Cognitive elaboration hypothesis. This hypothesis was tested by two ANCOVA's with country and order as the independent variables, year of study and sex as the

covariates, recall rates of positive and negative information as the dependent variables, respectively. The country x order interaction effects were not significant for recall rates of either positive or negative information, $F(1,58)<1$, n.s., $F(1,58)=1.04$, n.s., lending no support to the cognitive elaboration hypothesis. Means were shown in Table 5.

Insert Table 5 about here

Polarization hypothesis. To examine the polarization hypothesis, a series of 2-way ANCOVA's was conducted, with individual attributes as the dependent variables, country and order as the independent variables, sex and year of study as the covariates. Among the 32 ANCOVA's, country effect was only significant on style (the first attribute), $F(1,58)=4.73$, $p=.034$, and $m= -.09$ vs. -1.28, for Swiss and Chinese watches respectively. However, this effect would be non-significant if the significance levels were corrected by the number of tests conducted ($p<.0016$). Therefore, the present result yielded no strong support for the polarization hypothesis.

Attribute hypotheses. To examine if country of origin served as an attribute in product evaluation, a set of hierarchical regression analyses was conducted. The evaluations of important product attributes were entered as the first set of variables, the less important product attributes as the second set, and country of origin as the

third set. Then followed by order of presentation, and the country x order interaction. The outcome of this analysis is presented in Table 6.

Insert Table 6 about here

Results showed that the country of origin effect was significant even when all the product attributes were entered into the regression equation, and that the country x order interaction was not significant. Therefore, results implied that country of origin had a significant unique effect on product evaluation, an effect which was independent of the order of its presentation. Hence, the attribute hypothesis was supported. It should be noted that the results also suggested that there was no primacy effect.

Summary representation hypothesis. To test the summary representation hypothesis, another set of hierarchical regression analyses was conducted with country of origin entered first, followed by important and less important attributes. Results presented in Table 7 showed that country of origin had a significant effect on product evaluation. Moreover, the 8 important product attributes yielded a marginally significant contribution in predicting product evaluation. Furthermore, the 24 less important product attributes also made a significant contribution in predicting product evaluation. Thus, country of origin did not serve as a summary representation of the product

information presented.

Insert Table 7 about here

Attribute hypothesis as the cause of stereotypic evaluation. To evaluate the relationship between the use of country of origin information and stereotypic evaluation, a comparison of the regression equations, for the condition showing country of origin effect and the other conditions showing no such effect, was conducted. Hierarchical regression analyses for the conditions showing no effects are shown in Tables 8 and 9, and suggest that there was no significant change in multiple correlation when country of origin was either entered first or last. In fact, the country of origin could explain less than 2% of the variance in product evaluation in these conditions. This pattern is expected because these conditions did not show the country of origin effects. In contrast, in the condition showing the country of origin effect, the country of origin could explain 13.9% of variance in product evaluation, when it was entered first, and 5% of variance when it was entered last.

Insert Tables 8 and 9 about here

Discussion

Boundary Conditions of Country Of Origin Effects

Bilkey and Nes (1982), after a comprehensive

literature review, reported that there was no consistent finding showing that country of origin effects were qualified by demographic or personality variables, such as age, sex, education level, income level, level of dogmatism and preference for foreign products. They further concluded that all of these studies reviewed indicated that country of origin affected product evaluations (p.90).

On the other hand, the present study tested two process variables and revealed that country of origin effect occurred only when consumers were information-overloaded and highly involved in making buying decisions. In other words, information amount, and involvement level in making buying decisions are the boundary factors for the country of origin effect on product evaluation. The present results explain the weak country of origin effect in Ettenson, Wagner & Gaeth's (1988) study, which manipulated only 6 product attributes -- a definitely information underload condition. However, more work is needed to verify the robustness of the present findings.

Cognitive Processes of Country Of Origin Effects

Among the five hypotheses tested, only the attribute hypothesis was supported. Results of regression analyses showed that the information subjects used for product evaluation was different among the four groups.

The outcome of regression analyses suggested that the highly involved and information-overloaded subjects regarded the country of origin as a product attribute and

used it in the product evaluation process. Moreover, subjects in this condition used all the provided information in product evaluation, but subjects in low involvement conditions used the important attribute information only, without considering the less important attribute information and the country of origin. This finding is consistent with Borgida & Howard-Pitney's (1983) and Howard-Pitney, Borgida, & Omoto's (1986) findings that high personal involvement subjects used both salient and less salient stimuli, but low involvement subjects used only salient stimuli in making social judgment.

The results therefore suggest that consumers are trying to be rational in the product evaluation process. When a buying decision is important, they will pay more mental effort and process all the available product information. When it is unimportant, however, they will pay only limited mental effort and process the salient product information only. This argument is in line with Harris's (1987) and Zaichkowsky's (1986) conclusion that consumers would expend more effort on information search in high involvement situations.

However, human mental capacity is limited. Therefore, when the consumers are overloaded by the incoming product information, they may have no mental capacity to consider whether the information is unbiased or not. In addition, if the consumers are highly involved in making buying decisions, they will be highly motivated in their information processing (Celsi & Olson, 1988). They will

try to take every piece of product information into account, without filtration, and it results in stereotypic product evaluation, if there is some stereotypic information. The fact that the country of origin effect occurs only in high involvement and information overload condition is evidence for this argument. The present results showed that when subjects are overloaded and motivated to process as much information as they can, they will consider all the incoming information in product evaluation, with no mental capacity to screen out the stereotypic information. According to Anderson's (1974a, 1974b) information integration theory, consumers will combine the product information additively, and therefore lead to the stereotypic product evaluation if stereotypic product information is used.

To conclude, when consumers are highly motivated in making buying decisions and are information overloaded, they will be unable to screen out the stereotypic product information and will sum all of the incoming information in product evaluation, including the country of origin information, and show the country of origin effect. The proposed cognitive process is summarized in Figure 1.

It is interesting to note that the results of the present study did not support Hong and Wyer's (1989) cognitive elaboration explanation. It was mainly due to different designs and amount of information presented in the present study. First, either desirable or undesirable

information was presented in Hong & Wyer's (1989) experiment, but both types of information were presented simultaneously in the present experiment. Hence, in their experiment, information presented was highly coherent and easy to integrate. However, in the present experiment, information presented was conflicting and difficult to integrate, hence subjects would need more mental capacity to do so. Furthermore, there were only 17 pieces of product information in Hong & Wyer's experiment, but 33 pieces of product information in the present experiment, and subjects might only be information-overloaded in the present experiment. In short, subjects in Hong & Wyer's experiment might not be overloaded and have some remaining mental capacity for the cognitive elaboration process. Subjects in the present experiment, however, was already in short of mental capacity in the information overload condition in the present experiment and therefore could not undergo the cognitive elaboration process.

Second, as mentioned above, the absence of primacy effect is not an appropriate criterion for rejecting the attribute hypothesis, since a single attribute may not be able to produce the primacy effect (see Dreben, Fiske & Hastie, 1979). Instead, the presence of unique effect on product evaluation is a more appropriate criterion for supporting this hypothesis. In fact, the present results show that there was no primacy effect but that the country of origin had a unique contribution to product evaluation, supporting the argument that Hong & Wyer's (1989) test for

the attribute hypothesis (primacy-recency hypothesis in their terminology) may be inappropriate.

Marketing Implications

Based on the results of the present study, implications can be extended to product image building, and product packaging.

Product image building. The present result suggested that the country of origin effect was bounded by information overload and high involvement in making buying decisions. It is therefore logical to predict that there will be strong country of origin effects on complex and high involvement products, such as television sets and automobiles. Therefore, complex and high involvement products from countries with favorable images will enjoy the beneficial country of origin effects, but those from countries with unfavorable images will suffer from the adverse country of origin effects.

Fortunately, Johansson (1989) suggested that the brand name can serve as a summary statistics of a bloc of product attributes. Therefore, high involvement products from unfavorable countries can use a brand name to build up an image, which can convey a concept to consumer as it is from a favorable country, so as to counteract the adverse country of origin effects. For example, the Reebok has used a logo to convey a meaning as the products are from Britain, in fact, they are made in Korea! Products from unfavorable country of origins can also use models from

countries with favorable images in their advertisements, so as to convey a meaning as they are made in countries of favorable images. However, the 'masking' power of brand effects over country of origin effects surely needs more research effort.

Product packaging. The present results imply that in order to take the advantage of a favorable country image, consumers must be highly involved in the purchase decision, and information-overloaded. Marketers can achieve this objective by providing detailed product descriptions on the package, in addition to a large and salient label of the country of origin, so as to overload the consumers. Moreover, the product can be packaged into family or economic size, so as to activate consumers' money saving objective, which can enhance their involvement in purchase decisions (Celsi & Olson, 1988). The money saving objective can also be activated by many other tactics, such as by using '30% more' or 'free' labels, or by giving money saving coupons.

On the other hand, products from countries with unfavorable images should be of simple packaging and avoid complicated product description, so as to prevent consumers from being information-overloaded. Moreover, if feasible, it should be of trial size packaging, which would induce less involvement in purchase decisions than king size packaging, since the price of the former should be lower than that of the latter. Most important of all, avoid mentioning the country of origin on the package.

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Footnotes

[1]The eight pieces of product information were mentioned most frequently, and therefore were regarded as important attributes. These important attributes were always shown at the end of information presentation, so as to control for differential decay across information overload and underload conditions, which involved different length of information presentation time. Moreover, eight pieces of information plus one piece of country information was judged to be the suitable amount, since the memory capacity needed would be similar to the schema size (9.25) found in a pilot study of the present experiment.

[2]Based on Miller's magic number 7 $\pm$2, a normal person can store seven pieces of information. Hence, the country of origin was shown as the seventh, but not the last, piece of information in order to make sure every subject in underload conditions has enough memory to store this piece of information. In overload conditions, the 25th position was chosen so as to balance the percentage of information presented before the country of origin information.

[3]The covariates were necessary since sex and year of study were significantly correlated with the recall rate and product evaluation.

[4]If the difference between the two scores coded by two judges is less than $\pm$2.5%, that is, a total of 5% deviation, these two codes are regarded as agree.

Table 1

Summary of Hypotheses and Predictions

	Presentation of country name	
	First*	Last
Cognitive Elaboration Hypothesis		
Favorable Country	Recall more negative information	No difference
Unfavorable Country	Recall more positive information	No difference
Prediction:	There will be a significant country x order interaction effect on recall rate of positive and negative information.	
Encoding Hypothesis		
Favorable Country	Positive distortion	No distortion
Unfavorable Country	Negative distortion	No distortion
Prediction:	There will be a significant country x order interaction effect on the rates of positive and negative distortion.	
Polarization Hypothesis		
Favorable Country	More positive evaluation of product attributes	
Unfavorable Country	More negative evaluation of product attributes	
Prediction:	There will be a country main effect on evaluations of product attributes.	

Note. *First implies the country of origin information was presented before other product information, while last implies the country of origin information was presented after other product information.

Table 1 (con't)

Summary of Hypotheses and Predictions

	Presentation of country name	
	First*	Last
Attribute Hypothesis		
Favorable Country	Strong positive effect on product evaluation	
Unfavorable Country	Strong negative effect on product evaluation	
Prediction:	Country of origin should have a significant unique effect on product evaluation.	
Summary Representation Hypothesis		
Favorable Country	Strong positive effect on product evaluation by replacing the effect of important attributes	
Unfavorable Country	Strong negative effect on product evaluation by replacing the effect of important attributes	
Prediction:	Country of origin should be able to replace the effect of important information on product evaluation.	

Note. *First implies the country of origin information was presented before other product information, while last implies the country of origin information was presented after some other product information.

Table 2

Impression of Quality of Watches Manufactured by 20 Countries

Country	Number of responses	Mean	S.D.
Switzerland	24	8.71	0.86
Japan	24	8.04	1.04
United States	23	7.17	1.47
Hong Kong	24	7.00	0.98
West-Germany	24	6.83	2.33
England	23	6.65	1.34
Canada	22	6.50	1.34
South Korea	23	5.91	1.28
Taiwan	23	5.83	1.37
China	24	3.42	1.74
Denmark	11*	6.00	1.34
Singapore	21*	5.76	1.64
Morocco	5*	4.60	1.82
Mexico	8*	4.50	1.31
Poland	9*	4.44	1.33
Hungary	6*	4.17	2.23
Thailand	15*	4.13	1.13
Malaysia	13*	3.77	1.17
Philippines	17*	3.65	1.22
India	15*	2.07	1.16

Note. Means were based on 9-point scales. The higher the value, the more favorable the impression. * Responses for that country was less than 90% and hence was screened.

Table 3

Boundary of Country of Origin Effect on Product Evaluation

	Information Underload		Information Overload	
	Reward		Reward	
	Low	High	Low	High
Switzerland	-1.3857	-1.1974	-1.9893	-0.7957
China	-1.7774	-1.1108	-1.9883	-2.0835
F-value	0.9936	0.0485	0.0000	10.7435**

Note. Entries are means based on 9-point scales. The higher the value, the more favorable the product evaluation. ** $p<.01$.

Table 4

Proportion of Information being Positively and Negatively Distorted in High Reward and Information Overload Condition

	Positively distorted		Negatively distorted	
	Country first	Country last	Country first	Country last
Switzerland	.0275	.0199	.0179	.0108
China	.0184	.0222	.0121	.0129

Note. Entries are proportion of product attributes being distorted.

Table 5

Recall Rate of Positive and Negative Information in High Reward and Information Overload Condition

	Positive information		Negative information	
	Country first	Country last	Country first	Country last
Switzerland	.3681	.3642	.3310	.3241
China	.4124	.3876	.3305	.3973

Note. Entries are proportion of information recalled.

Table 6

Hierarchical Regression Analyses of Product Evaluation in the High Reward and Information Overload Condition

Predictor variables	Multiple R	Change of Multiple R
Step 1		
Important attributes	.4946	.4946**
Step 2		
Less important attributes	.8444	.3498**
Step 3		
Country of origin	.8735	.0291**
Step 4		
Order	.8756	.0021
Step 5		
Country x Order	.8790	.0034

Note. ** Change of multiple correlation significant at $p<.05$.

Table 7

Hierarchical Regression Analyses of Product Evaluation in High Reward and Information Overload Condition

Predictor variables	Multiple R	Change of Multiple R
Step 1		
Country of origin	.3724	.3724**
Step 2		
Important attributes	.5758	.2034*
Step 3		
Less important attributes	.8735	.2977**

Note. ** Change of multiple correlation significant at $p<.05$. * Multiple correlation change significant at $p<.07$.

Table 8

Regression Analyses of Product Evaluation for Groups Showing No Country Of Origin Effects

Predictor variables	Information Underload, Low reward	Information Underload, High reward	Information Overload, Low reward
Step 1			
Important attributes			
Multiple R	.6960**	.7638**	.7241**
Step 2			
Less important attributes			
Multiple R	.8854	.8364	.8172
Change in R	.1894	.0726	.0931
Step 3			
Country of origin			
Multiple R	.8864	.8424	.8180
Change in R	.0010	.0060	.0008
Step 4			
Order			
Multiple R	.9027**	.8444	.8184
Change in R	.0163	.0020	.0004
Step 5			
C x O			
Multiple R	.9101	.8580	.8208
Change in R	.0074	.0136	.0024

Note. ** Change of multiple correlation significant at $p<.05$.

Table 9

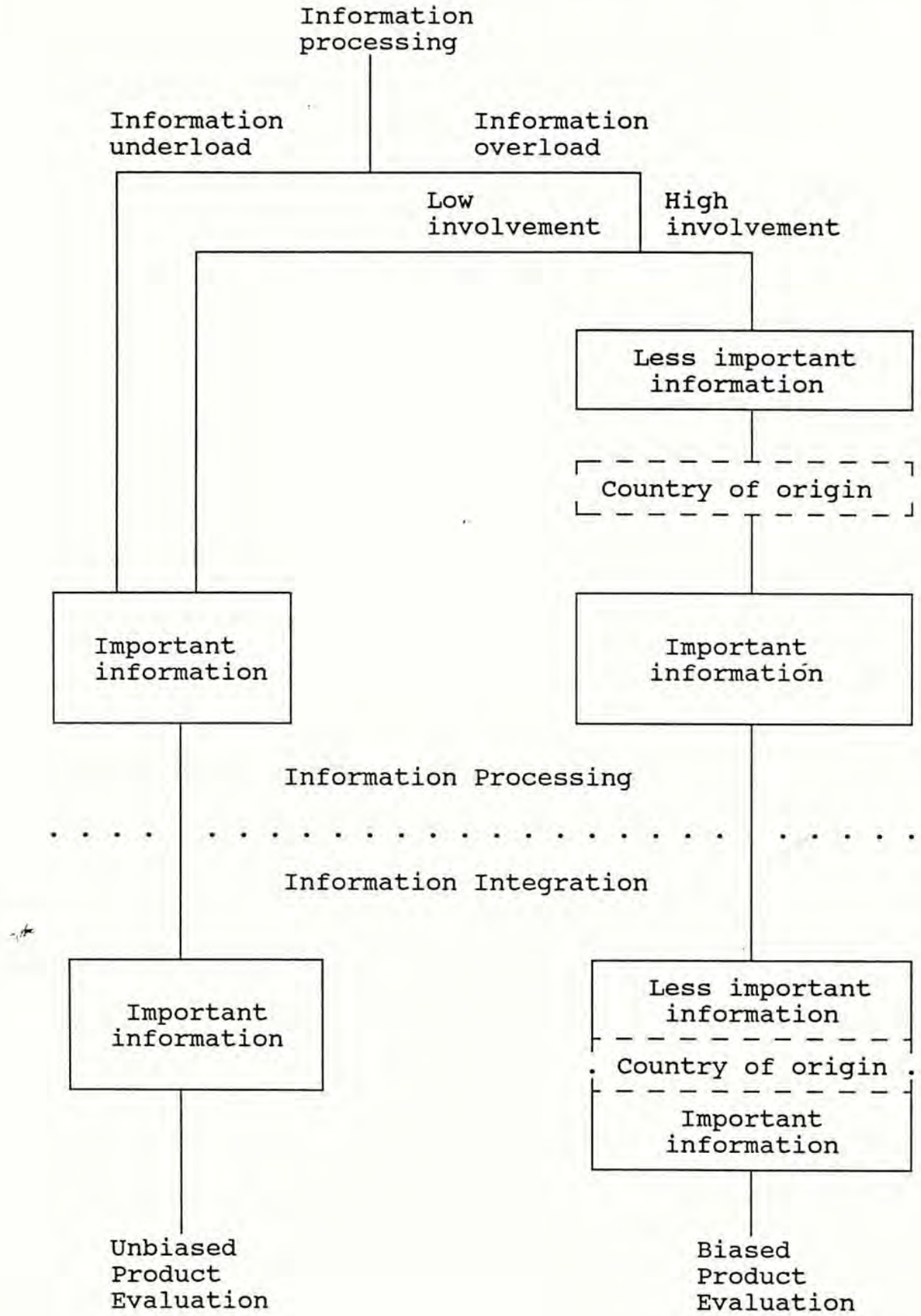
Regression Analyses of Product Evaluation for Groups Showing No Country Of Origin Effects

Predictor variables	Information Underload, Low reward	Information Underload, High reward	Information Overload, Low reward
Step 1			
Country of origin			
Multiple R	.1290	.0272	.0000
Step 2			
Important attributes			
Multiple R	.6961	.7658	.7246
Change in R	.5671**	.7386**	.7246**
Step 3			
Less important attributes			
Multiple R	.8864	.8424	.8180
Change in R	.1903	.0766	.0934

Note. ** Change of multiple correlation significant at $p<.05$.

Figure Caption

Figure 1. The effect of information amount and involvement level in making buying decision on product evaluation.


Information processing
Information underload
Information overload
Low involvement
High involvement
Less important information
Country of origin
Important information
Important information
Information Processing
Information Integration
Important information
Less important information
Country of origin
Important information
Unbiased Product Evaluation
Biased Product Evaluation

Appendix 1

Product Information Presented (English version)

Important Product Information:

First rate style.

Price ranges from HKD 5,000 - 8,000.

Error is less than 3 seconds per year.

Ranked as the top 500 brands in the world.

Not as durable as watches of the same class.

Use traditional designs.

Always lead the fashion.

Need to be repaired once per year in average.

Less Important Product Information:

Watch case is made of high quality metal.

Six functions.

Sharp and vulgar colors.

Classic and elegant watches with hands.

Primitive mechanical movements, not electronic quartz movements.

Large in size and heavy in weight.

150 meter water resistance.

No indication of date.

Alarms accurately, with pleasant sounds.

Most of the uses regard it as very practical.

6 month warranty.

Coarse workmanship.

Classic, refined manual winding watch.

Decorated with large pieces of precious stones.

A few decades of manufacturing experiences.

Used by celebrities.

Appendix 1 (con't)

Product Information Presented (English version)

Less important product information:

Loud noise from springs and movements.

Still running smoothly even drop down from 3 storeies.

The watch glass is made of lead crystal.

Vulgar decoration.

Excellent sales.

Life expectancy is more than 50 years.

Not emphasize in packaging.

Dust can easily get in.

Appendix 1 (con't)

Product Information Presented (Chinese Version)

1. 款式一流
2. 價錢港幣 $5,000-8,000
3. 每年誤差少於三秒
4. 排名世界首五百位
5. 較同級手錶易壞
6. 採用傳統設計
7. 永遠領導潮流
8. 平均每年需修理一次
9. 錶身採用優質金屬鑄造
10. 六種功能
11. 色彩誇張
12. 典雅行針錶
13. 採用原始機械式錶肉，而非電子石英式
14. 錶身較大較重
15. 水深 150 米仍絕對防水
16. 缺乏星期日曆顯示
17. 準時響鬧，聲音悅耳
18. 大部份用戶認為十分實用
19. 保用半年
20. 手工粗糙

Appendix 1 (con't)

Product Information Presented (Chinese Version)

21. 古典精緻上鏈錶
22. 採用大顆寶石鑲嵌
23. 數十年製作經驗
24. 顯赫人仕專用
25. 行針聲嘈吵
26. 從三層樓掉下仍行走暢順
27. 採用含鉛玻璃錶面
28. 裝飾俗套
29. 銷量甚佳
30. 壽命超過五十年
31. 不著重包裝
32. 很易入塵

Appendix 2

Questionnaire (English version)

Group:_____ ID:_____

Please circle the appropriate numbers according to your impression of the watch.

1. Style	Ugly	-4	-3	-2	-1	0	1	2	3	4	Beautiful
2. Price	Cheap	-4	-3	-2	-1	0	1	2	3	4	Expensive
3. Accuracy	Inaccurate	-4	-3	-2	-1	0	1	2	3	4	Accurate
4. Prestige	Poor	-4	-3	-2	-1	0	1	2	3	4	Good
5. Durability	Not durable	-4	-3	-2	-1	0	1	2	3	4	Very durable
6. Design	Not innovative	-4	-3	-2	-1	0	1	2	3	4	Innovative
7. Popularity	Old fashioned	-4	-3	-2	-1	0	1	2	3	4	Fashionable
8. Quality	Poor	-4	-3	-2	-1	0	1	2	3	4	Excellent
9. Watch case material	Poor	-4	-3	-2	-1	0	1	2	3	4	Excellent
10. Function	Few	-4	-3	-2	-1	0	1	2	3	4	Many
11. Color matching	Poor	-4	-3	-2	-1	0	1	2	3	4	Appropriate
12. With hands design	Vulgar	-4	-3	-2	-1	0	1	2	3	4	Refined
13. Mechanical movements	Inferior technology	-4	-3	-2	-1	0	1	2	3	4	Advance technology
14. Size	Bulky	-4	-3	-2	-1	0	1	2	3	4	Suitable
15. Water resistance	Not at all	-4	-3	-2	-1	0	1	2	3	4	Absolute
16. Date information	In lack	-4	-3	-2	-1	0	1	2	3	4	In full
17. Alarm system	Poor	-4	-3	-2	-1	0	1	2	3	4	Good
18. Practical	Not practical	-4	-3	-2	-1	0	1	2	3	4	Practical
19. Warranty	Not enough	-4	-3	-2	-1	0	1	2	3	4	Enough
20. Workmanship	Coarse	-4	-3	-2	-1	0	1	2	3	4	Skillful
21. Manual winding	Old fashioned	-4	-3	-2	-1	0	1	2	3	4	Classical
22. Decoration	Bad taste	-4	-3	-2	-1	0	1	2	3	4	Noble

Appendix 2 (con't)

Questionnarie (English version)

23. Manufacturing Experiences
Lack of -4 -3 -2 -1 0 1 2 3 4 Rich in

24. Users Ordinary people -4 -3 -2 -1 0 1 2 3 4 Celebrities

25. Sounds Noisy -4 -3 -2 -1 0 1 2 3 4 Pleasant

26. Shocking resistance
Unreliable -4 -3 -2 -1 0 1 2 3 4 Reliable

27. Watch glass quality Poor -4 -3 -2 -1 0 1 2 3 4 Excellent

28. Decoration Vulgar -4 -3 -2 -1 0 1 2 3 4 Unique

29. Sales Poor -4 -3 -2 -1 0 1 2 3 4 Excellent

30. Life expectancy Short -4 -3 -2 -1 0 1 2 3 4 Long

31. Packaging Simple -4 -3 -2 -1 0 1 2 3 4 Exquisite

32. Dust resistance Poor -4 -3 -2 -1 0 1 2 3 4 Good

Overall speaking I think this watch is:

33. Very poor -4 -3 -2 -1 0 1 2 3 4 Very good

34. Not likable -4 -3 -2 -1 0 1 2 3 4 Likable

35. The country of origin of this watch is _____.

36. I think the watches manufactured by this country is

Very poor -4 -3 -2 -1 0 1 2 3 4 Very good

37. I think the reward for this experiment is

Too little -4 -3 -2 -1 0 1 2 3 4 Too much

38. I think the product information is

Insufficient -4 -3 -2 -1 0 1 2 3 4 Too much

Year:_____ Sex:_____

Appendix 2 (con't)

Questionnnaire (Chinese version)

組別: ____ 編號: ____

請在下面圈出你對這個手錶的印象，並填寫你的肯定程度。

1. 款式	醜陋	-4	-3	-2	-1	0	1	2	3	4	美觀
2. 價格	平宜	-4	-3	-2	-1	0	1	2	3	4	昂貴
3. 準確	不準確	-4	-3	-2	-1	0	1	2	3	4	很準確
4. 聲譽	差	-4	-3	-2	-1	0	1	2	3	4	好
5. 耐用	不耐用	-4	-3	-2	-1	0	1	2	3	4	很耐用
6. 設計	無新意	-4	-3	-2	-1	0	1	2	3	4	有新意
7. 流行程度	老套	-4	-3	-2	-1	0	1	2	3	4	時尚
8. 品質	低劣	-4	-3	-2	-1	0	1	2	3	4	優良
9. 錶身質料	劣等	-4	-3	-2	-1	0	1	2	3	4	優質
10. 功能	少	-4	-3	-2	-1	0	1	2	3	4	多
11. 顏色	配襯拙劣	-4	-3	-2	-1	0	1	2	3	4	配襯得宜
12. 行針設計	低俗	-4	-3	-2	-1	0	1	2	3	4	高雅
13. 機械錶肉	低科技	-4	-3	-2	-1	0	1	2	3	4	高工藝
14. 體積	笨重	-4	-3	-2	-1	0	1	2	3	4	夠份量
15. 防水	不防水	-4	-3	-2	-1	0	1	2	3	4	絶對防水
16. 星期日曆資料	缺乏	-4	-3	-2	-1	0	1	2	3	4	齊全
17. 報時系統	很差	-4	-3	-2	-1	0	1	2	3	4	很好
18. 實用	絶不實用	-4	-3	-2	-1	0	1	2	3	4	十分實用
19. 保用期	不足夠	-4	-3	-2	-1	0	1	2	3	4	足夠
20. 手工	粗糙	-4	-3	-2	-1	0	1	2	3	4	精湛
21. 上鏈設計	落伍	-4	-3	-2	-1	0	1	2	3	4	復古
22. 寶石鑲嵌	庸俗	-4	-3	-2	-1	0	1	2	3	4	高貴

Questionnaire (Chinese version)

23. 製作經驗	貧乏	-4	-3	-2	-1	0	1	2	3	4	豐富
24. 使用者	普羅大衆	-4	-3	-2	-1	0	1	2	3	4	高級人仕
25. 行針聲	嘈吵	-4	-3	-2	-1	0	1	2	3	4	悅耳
26. 防震系統	不可靠	-4	-3	-2	-1	0	1	2	3	4	很可靠
27. 玻璃錶面	劣質	-4	-3	-2	-1	0	1	2	3	4	優質
28. 裝飾	俗套	-4	-3	-2	-1	0	1	2	3	4	獨特
29. 銷量	甚差	-4	-3	-2	-1	0	1	2	3	4	可觀
30. 壽命	短	-4	-3	-2	-1	0	1	2	3	4	長
31. 包裝	簡陋	-4	-3	-2	-1	0	1	2	3	4	精美
32. 防塵程度	易入塵	-4	-3	-2	-1	0	1	2	3	4	防塵

總括而言，我覺得這個手錶

33.	很差	-4	-3	-2	-1	0	1	2	3	4	很好
34.	不喜歡	-4	-3	-2	-1	0	1	2	3	4	很喜歡

35. 這手錶的產地來源是: _____

36. 我覺得這個國家生產的手錶

	很差	-4	-3	-2	-1	0	1	2	3	4	很好

37. 我覺得這部份實驗的報酬

	太少	-4	-3	-2	-1	0	1	2	3	4	很合理

38. 我剛才十分努力去理解這些產品資料

	十分馬虎	-4	-3	-2	-1	0	1	2	3	4	十分努力

39. 我覺得這部份的產品資料

-4	-3	-2	-1	0	1	2	3	4	
不足夠				足夠				太多	

年級: _____ 性別: _____